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(54) Title: **METHOD AND APPARATUS FOR LOGGING A WELL USING A FIBER OPTIC LINE AND SENSORS**

(57) **Abstract:** A system and method to log a wellbore, comprising a logging tool adapted to be deployed in a wellbore environment, the logging tool including at least one sensor for taking a measurement of the wellbore environment. The sensor is a fiber optic sensor and the system includes a fiber optic line in optical communication with the sensor. The data measured by the sensor is transmitted through the fiber optic line on a real time basis to the surface, where the data is processed into a real time display. In one embodiment, the fiber optic sensor is a passive sensor not requiring electrical or battery power. In another embodiment, a continuous tube with one end at the earth's surface and the other end in the wellbore is attached to the logging tool and includes the fiber optic line disposed therein.